

FIG.\_1

	MSLS	SPGV	HLFY	DSRG	QGAG	ALDEL	CWGLE	EEQG	VP	CAIT	Majority
	10		20		30		40				
1	MSLS	SPGV	HLFY	HSRW	QGTR	VLDEL	CWGLE	EEQG	VP	CAIT	cfu_orfX.aa
1	MSLS	PPGV	RLFY	DPRH	AGAI	NELC	WGLE	EEQG	VP	CAIT	kpn_orfX.aa
	YDGG	GDAA	ALGA	LAAK	SSST	LRVGL	GLSAS	GDIA	LTHA	QLP	Majority
	50		60		70		80				
41	CDDH	DCAL	ALGK	LAAK	SSST	LRVGL	GLNAT	GDIA	LTHA	QLP	cfu_orfX.aa
41	YDGG	GDAA	ALGA	LAAK	SSST	LRVGL	GIGLSA	SGEIA	LTHA	QLP	kpn_orfX.aa
	ADAAL	ATGH	VTAG	TAAQL	RTRL	GANAG	QLVK	VLPL	SERIK		Majority
	90		100		110						
81	EDRA	LVC	GHT	TRAG	TAAQ	IRTL	GANAG	QLVK	VLPL	PFSE	- IK
81	ADAP	LAT	GHV	TDSD	DDQL	RTRL	GANAG	QLVK	VLPL	SERN	.

FIG.\_4

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Afl IV  
Sca I

ATGAAAAGATCAAAACGATTTCAGTACTGGCCCCAGCGCCCCGTCATCAGGACGGGCTGATTGGCGAGTGGCCTGAAGAGGGGCTGATC  
 TACITTTCTAGTTTTGCTAAACGTCATGACCGGGTCCGGGGCAGTTAGTCTGCCCCGACTAACCGCTACCCGACTTCTCCCCGACTAG 90

M K R S K R F A V L A Q R P V N Q D G L I G E W P E E G L I  
 dhaB1

GCCATGGACAGCCCCCTTIGACCCGGTCTCTTCAGTAAAGTGGACAACGGTCTGATCGTGAACCTGGACGGCAACGCCGGGACCAGTTT  
 CGGTACCTGTCCGGGAAACTGGGCCAGAGAAGTCATTTTACCCTGTTGCCAGACTAGCAGCTTGACCTGCCGTTTGGGGCCCTGGTCAAA 180

A M D S P F D P V S S V K V D N G L I V E L D G K R R D Q F  
 dhaB1

Psp1406 I

GACATGATCGACCGATTATCGCCGATTACGGGATCAACGTTGAGCGCACAGAGCAGGCAATGCCCTTGGAGCGGTGGAAATAGCCCGT  
 CTGTACTAGCTGGCTAAATAGCGGCTAATGCGCTAGTTGCAACTCGGTGTCCTCGTTACGGGGACCCTCCGCCACCTTTATCGGGCA 270

D M I D R F I A D Y A I N V E R T E Q A M R L E A V E I A R  
 dhaB1

ATGCTGGTGGATATTCAGCTCAGCCGGGAGGAGATCATTTGCCATCACTACCGCCATCAGCCGGCCAAAGCGGTGCGAGGTGATGGCGCAG  
 TACGACCACCTATAAGTGCAGTCGGCCCTCCTCTAGTAACGGTAGTGCGGGTAGTGCGGGCCGGTTTCGCCAGCTCCACTACCGCGTC 360

M L V D I H V S R E E I I A I T T A I T P A K A V E V M A Q  
 dhaB1

FIG..2A-1

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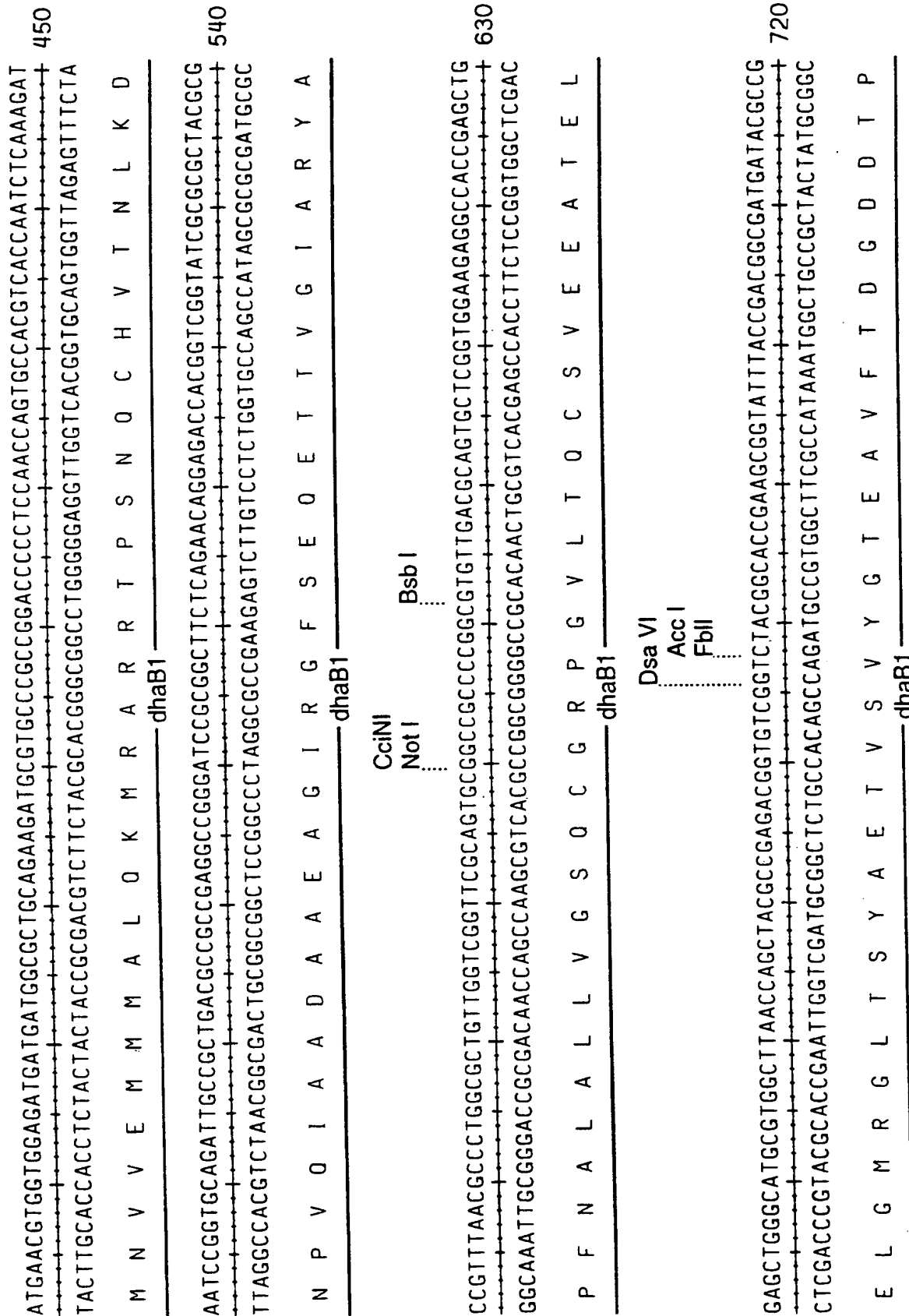


FIG. 2A-2

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Eco47 III  
TGGTCAAGGCGTTCTCGCCTCGGCCTACGCCCTCCCGGGTGAATAATGGCTACACCTCCGGCACCGGATCCGAAGCGCTGATGGGC 810  
ACCAGTTTCCGCAAGGAGCGGAGCCGATGCGGAGGCGGCCCAACTTTACCGGATGTGGAGGCCGTGGCTAGGCTTCGCGACTACCCG

W S K A F L A S A Y A S R G L K M R Y T S G T G S E A L M G  
-----dhaB1

EcoE I Bsa XI  
TATTCGGAGAGCAAGTCGATGCTCTACCTCGAATCGCGCTGCATCTTCACTAAAGGCCGCGGGTTCAGGGACTGCAAAACGGCGCG 900  
ATAAGCCTCTCGTTCAGCTACGAGATGGAGCTTAGCGGACGTAGAAAGTAATGATTCCCGGGCCCCAAGTCCCTGACGTTTTCGCCGCGC

Y S E S K S M L Y L E S R C I F I T K G A G V O G L Q N G A  
-----dhaB1

GTGAGCTGTATCGGCATGACCGGCGCTGTGCCGTCGGCATTCGGCGGTGCTGGCGGAAACCTGATCGCCTCTATGCTCGACCTCGAA 990  
CACTCGACATAGCCGTACTGGCCGCGACACGGCAGCCCGTAAGCCCGCCACGACCGCCTTTTGGACTAGCGGAGATACGAGCTGGAGCTT

V S C I G M T G A V P S G I R A V L A E N L I A S M L D L E  
-----dhaB1

GTGGCGTCGGCCAACGACAGACTTTCTCCCACTCGGATATTCGCCGCACCGCGCACCCCTGATGCAGATGCTGCCGGGCACCGACTTT 1080  
CACCGCAGGCGGTTGCTGCTGAAGAGGGTGAGCCTATAAGCGCGCTGGCGCGCTGAGACTACGCTACGACGCGCCCGTGGCTGAAA

V A S A N D O T F S H S D I R R T A R T L M O M L P G T D F  
-----dhaB1

FIG. 2B-1

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P111108 I

ATTTTCTCCGGCTACAGCGGGTCCCGAATGTTCCGCCGGCTCGAACTTCGAATCGGAAGATTTTGTGATTACAACATC  
 TAAAGAGGCCGATGTCGCCCCACGGCTTGATGCTGTGTGTACAAAGCGGCCGAGCTTGAAGCTACGCCCTTCTAAAACACTACTAATGTTGTAG  
 1170

I F S G Y S A V P N Y D N M F A G S N F D A E D F D D Y N I  
 dhaB1

CTGCAGCGTGACCTGATGGTTGACGGGGGCTGCGTCCGGTGACCGAGCGGGAACCATTTGCCATTCGCCAGAAAGCGCGGGCGGATC  
 GACGTCCACTGGACTACCAACTGCCCGCGGACGCGAGCCACTGGCTCCGCTTTGGTAACGGTAAGCGGCTTTTCGCCGCGCCCGCTAG  
 1260

L O R D L M V D G G L R P V T E A E T I A I R Q K A A R A I  
 dhaB1

CAGCGGGTTTCCCGGAGCTGGGGCTGCCGCCCAATCGCCGACGAGGAGGTGGAGGCCGCCACCTACGCGCACGGCAGCAACGAGATGCCG  
 GTCCGCCAAAAGGCGCTCGACCCCGACGGGGTTAGCGGCTGCTCTCCACCTCCGCGGGTGGATGCGCGTGCCGTCGTTGCTCTACGGC  
 1350

Q A V F R E L G L P P I A D E E V E A A T Y A H G S N E M P  
 dhaB1

CCGCGTAACGTGGAGGATCTGAGTCCGGTGAAGAGATGATGAAGCGCAACATCACCAGCCCTCGATATGTCCGCCGCGCTGAGCCGC  
 GCGCATTCACCCACCTCCTAGACTCAGCCACCTTCTCTACTACTTCCGCTGTAGTGGCCGGAGCTATAACAGCCCGCGGCGACTCGGCG  
 1440

P R N V V E D L S A V E E M M K R N I T G L D I V G A L S R  
 dhaB1

FIG.-2B-2

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AGCGGCTTTGAGGATATCGCCAGCAATATTCICAATATGCTGCGCCAGCGGGTCACCGGGGATTACCTGCAGACCTCGGCCATTCTCGAT 1530  
TCGCCGAAACTCCTATAGCGGTCGTTATAAGAGTTATACGACGCGGTGCGCCAGTGGCCGCTAATGGACGCTCTGGAGCCGGTAAGAGCTA  
S G F E D I A S N I L N M L R O R V T G D Y L Q T S A I L D  
-----dhaB1

# FIG.\_2B-3

CGGCAGTTCGAGGTGGTGAGTGGGTCAACGACATCAATGACTATCAGGGGCGGGCACC GGCTATCGCATCTCTGCCGAACGCTGGGCG 1620  
GCCGTCAAGCTCCACCACTCAGCCAGTTGCTGTAGTTACTGATAGTCCCCGGCCCCGTGGCCGATAGCGTAGAGACGGCTTGGGACCCCGC  
R Q F E V V S A V N D I N D Y O G P G T G Y R I S A E R W A  
-----dhaB1

Drd II

GAGATCAAAAATATTCGGGGCGTGGTTCAGCCCGACACCATTTGAATAAGCGGGTATTCTGTGCAACAGACAAACCCAAATTCAGCCCTCT 1710  
CTCTAGTTTTTATAAGGCCCCGCACCAAGTCGGGCTGTGGTAACCTATTCCGCCATAAGGACACGTTGCTGTGGGTTAAGTCGGGAGA  
E I K N I P G V V O P D T I E  
-----dhaB1

**H**<sub>dh</sub>

V Q O T T Q I O P S  
-----dhaB2

TTTACCCTGAAAACCCGCGAGGGCGGGTAGCTTCTGCCGATGAACGCGCCGATGAAGTGGTGATCGGCGTCGGCCCTGCCCTTCGATAAA 1800  
AAATGGGACTTTTGGGCGCTCCCGCCCCCATCGAAGACGGCTACTTGGCGGGCTACTTCACCACTAGCCGACGCGGGACGGAAGCTATTT  
F T L K T R E G G V A S A D E R A D E V V I G V G P A F D K  
-----dhaB2

# FIG.\_2C-1

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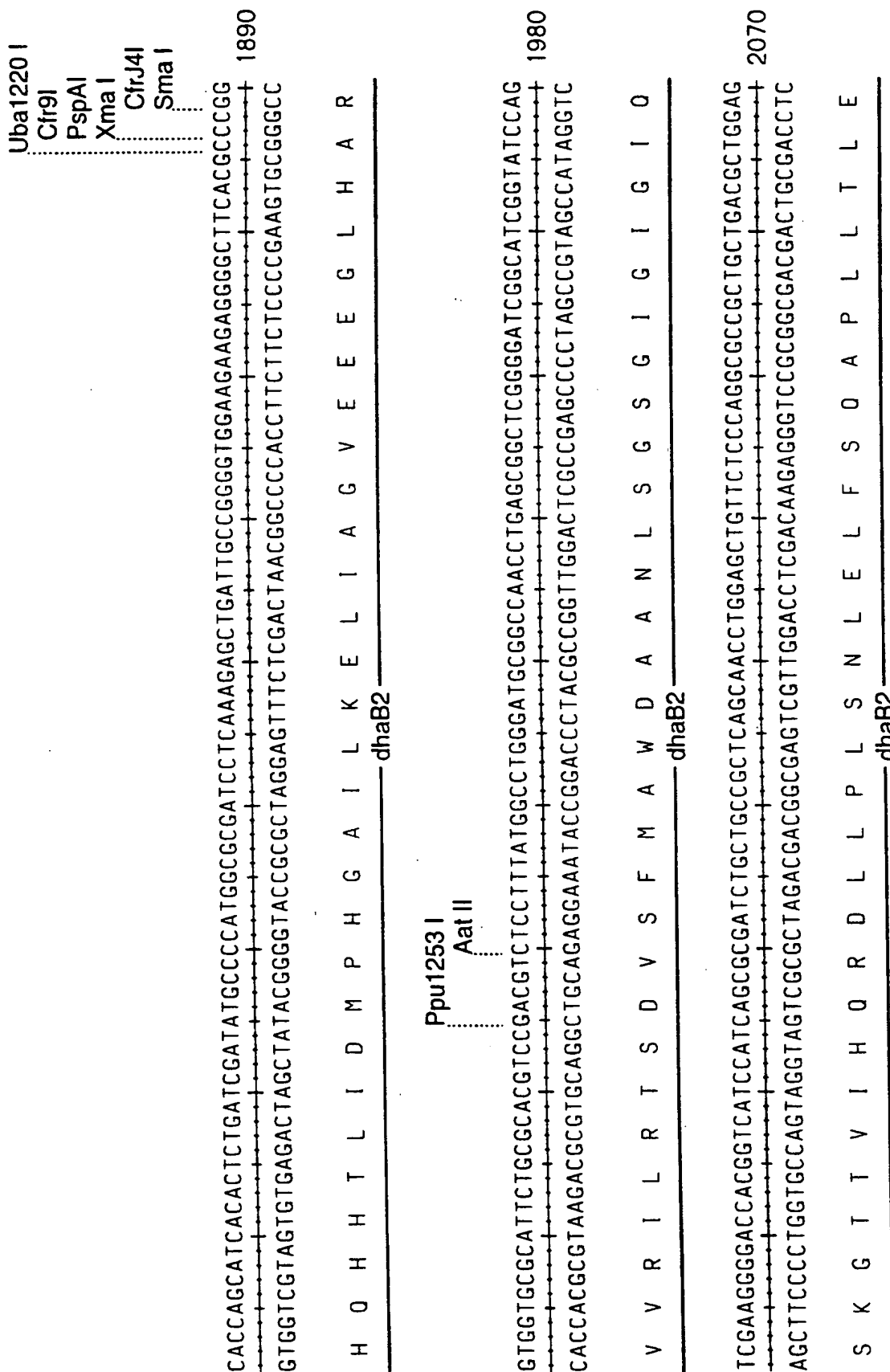


FIG.-2C-2

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ACCTACCGGCAGATTGGCAAAACGCTGCGGCTATGCGGCAAGAGTCACCTTCGCCGGTGCCGGTGGTGAACGATCAGATGGTGCGG 2160  
TGGATGGCCGCTCTAACCGTTTTTGGGACGCGCGGATACGCGGTTTCTCAGTGAAGCGGCCACGGCCACCACTTGCTAGTCTACCACGCC  
T Y R Q I G K N A A R Y A R K E S P S P V V N D Q M V R  
-----dhaB2

FIG.\_2C-3

CCGAAATTTATGGCCAAAGCCGGCTATTTCATATCAAGAGACCAACATGTGTGCAGGACGCCGAGCCCGTCACCCCTGCACATCGAC 2250  
GGCTTTAAATACCGGTTTCGGCGCGGATAAAGTATAGTTTCTCTGGTTGTACACCACGTCCTGCGGCTCGGGCAGTGGGACGTTGTAGCTG  
P K F M A K A A L F H I K E T K H V V O D A E P V T L H I D  
-----dhaB2

TTAGTAAGGAGTGACCATGAGCGAGAAAACCATGCGGTCGAGGATTATCCGTTAGCCACCCGCTGCCCGGAGCATATCCTGACGCCCTA 2340  
AATCATCCCTCACTGGTACTCGCTCTTTTGGTACGCGCACGTCCTAATAGGCAATCGGTGGCGGACGGGCCCTCGTATAGGACTGCGGAT  
M S E K T M R V O D Y P L A T R C P E H I L T P  
-----dhaB3

L V R E  
-----dhaB2

FIG.\_2D-1



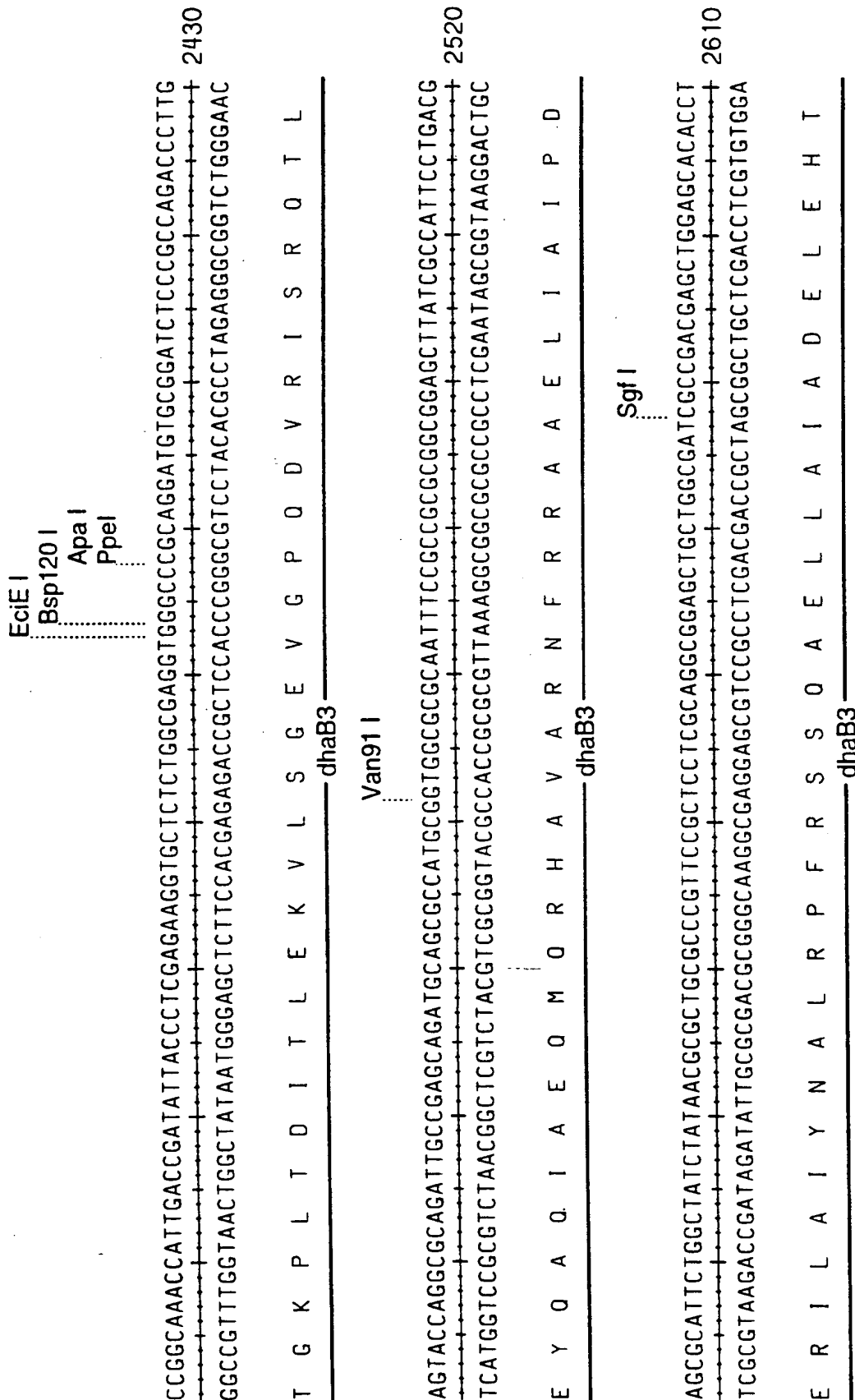


FIG. 2D-2

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GGCATGCGACAGTGAATGCCGCCCTTTGTCCGGGAGTCGGCGGAAGTGATCAGCAGCGGCATAAAGCTGCGTAAAGGAAGCTAAGCGGAGG 2700  
CCGTACGCTGTCACITACGGCGGAAACAGGCCCTCAGCCGCTTACACATAGTCGTGCGCGTATTCGACGCATTTCCTTCGATTGCGCTCC  
W H A T V N A A F V R E S A E V Y O Q R H K L R K G S  
-----dhaB3-----

Xcm I

TCAGCATGCCGTTAATAGCCGGGATTGATATCGGCAACGCCACCACCGAGGTGGCGCTGGCGTCCGACTACCCGCAGCGGAGGGCGTTTG 2790  
AGTCGTACGGCAATTATCGGCCCTAACTATAGCCGTTGCGGTGGTGGCTCCACCGGACCGCAGGCTGATGGGCGTCCGCTCCCGCAAAC  
M P L I A G I D I G N A T T E V A L A S D Y P Q A R A F  
-----dhaB4-----

FIG..2D-3

SanD I

TTGCCAGCGGGATCGTCGCGACGACGGGCGCATGAAAGGGACGCGGGACAATATCGCCGGGACCCCTCGCCGCGCTGGAGCAGGCCCTGGCGGA 2880  
AACGGTCGCCCTAGCAGCGCTGCTGCCCGTACTTTCCCTGCGCCCTGTTATAGCGGCCCTGGGAGCGCGGACCTCGTCCGGGACCGCT  
V A S G I V A T T G M K G T R D N I A G T L A A L E O A L A  
-----dhaB4-----

AAACACCGTGGTCGATGAGCGATGCTCTCGCATCTATCTTAACGAAGCCGCGCGGIGATGGCGATGTCGCGATGGAGACCAITACCGG 2970  
TTTGTGGCACCAGCTACTCGCTACAGAGAGCGTAGATAAGATTGCTTCGGCGCGGCCACTAACCGCTACACCGCTACCTCTGGTAGTGGC  
K T P W S M S D V S R I Y L N E A A P V I G D V A M E T I T  
-----dhaB4-----

FIG..2E-1

09/308207

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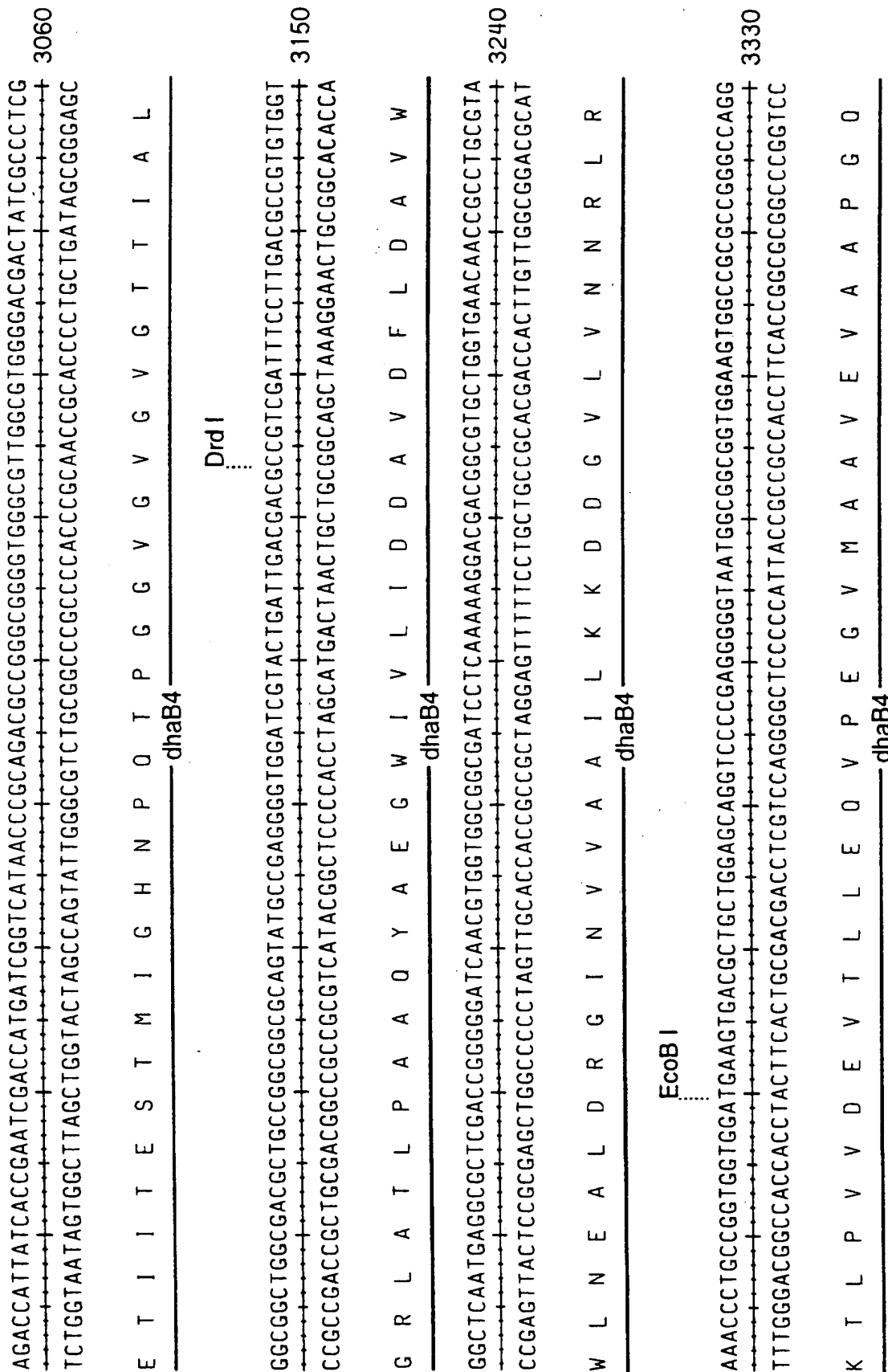


FIG.-2E-2

3420

TGGTGGGATCCTGTCGAATCCCTACGGGATCGCCACCTTCTTCGGGCTAAGCCCGGAAGAGACCCAGGCCATCGTCCCCATCGCCCCGCG  
ACCACGCTAGGACAGCTTAGGGATGCCCCTAGCGGTGAAGAAGCCCGATTCTGGGCTTCTCTGGGTCGGTAGCAGGGGTAGCGGGGCGC

V V R I L S N P Y G I A T F F G L S P E E T O A I V P I A R

dhaB4

3510

CCCTGATTGGCAACCGTTCGGGGTGGTGTCAAGACCCCGCAGGGGATGTGCAGTCGCGGGTGATCCCGGGGCAACCTCTACATTA  
GGGACTAACCGTTGGCAAGGCGCCACACGAGTTCTGGGGCGTCCCCCTACACGTCAGCGCCCTAGGGCCGCCCTTGGAGATGTAAT

A L I G N R S A V V L K T P Q G D V O S R V I P A G N L Y I

dhaB4

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3600

GCGCGAAAGCGCGGAGAGGCGCGATGTCCGCGAGGGCGGGAAGCCATCATGCAGCGGATGAGCGCCTGCGCTCCGGTACGCGACA  
CGCGCTTTTCGCGGCGCTCTCCGCGTACAGCGGCTCCCGCGCTTCGGTAGTACGTCCGCTACTCGCGACGCGAGGCCCATGCGCTGT

S G E K R R G E A D V A E G A E A I M O A M S A C A P V R D

dhaB4

FIG..2E-3

Taq II'

3690

TCCGCGGGAACCGGACCCACGCGGCGGCAATGCTTGAGCGGTGCGCAAGGTAATGGCGTCCCTGACCGGCCATGAGATGAGCGCGA  
AGGCGCGCTTGGCCCGTGGGTGCGGCGCGCGTACGAACCTCGCCACCGCTTCCATTACCGCAGGGACTGGCCGTACTCTACTCGCGCT

I R G E P G T H A G G M L E R V R K V M A S L T G H E M S A

dhaB4

FIG..2F-1

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TATACATCCAGGATCGTGGCGTGGATACGTTTATTCGCGCAAGTGCAGGGCGGGATGGCCGGCGAGTGGCCCATGGAGAATGCCG 3780  
 ATATGTAGGTCCTAGACGACCGCCACCTATGCAATAAGGCGGTTCCACGTCGCCCTACCGCGGCTCAGCGGTACCTCTTACGGC  
 I Y I Q D L L A V D T F I P R K V Q G G M A G E C A M E N A  
 -----dhaB4-----  
 TCGGGATGGCGGCGATGGTGAAAGCGGATCGTCTGCAAAATGCAGGTTATCGCCCGCGAACTGAGCGCCCGACTGCAGACCGAGGTGGTGG 3870  
 AGCCCTACCGCGCGTACCACCTTCGCCCTAGCAGACGTTTACGTCCAATAGCGGGCGCTTGACTCGCGGGCTGACGCTCTGGCTCCACCACC  
 V G M A A M V K A D - R L Q M Q V I A R E L S A R L Q T E V V  
 -----dhaB4-----  
 TGGCGGCGTGGAGGCCAACATGGCCATCGCCGGGCGTTAACCACCTCCGGCTGTGGGGCGCGCTGGCGATCCTCGACCTCGGCGCGCG 3960  
 ACCCGCCGACCTCCGGTTGTACCGGTAGCGGGCCCCGCAATTGGTGAGGGCCGACACGCCCGCGGCGCTAGGAGCTGGAGCCGCGGC  
 V G G V E A N M A I A G A L T T P G C A A P L A I L D L G A  
 -----dhaB4-----  
 GCTCGACGGATCGCGCGATCGTCAACGCGGAGGGGCAGATAACGGCGGTCCATCTCGCCGGGCGGGGAATATGGTCAGCCTGTGATTA 4050  
 CGAGCTGCCTACGCGCGTAGCAGTTGCGCCTCCCGGCTATTGCGCGCCAGGTAGAGCGGGCCCCGCCCTTATACCAGTCGGACAACATA  
 G S T D A A I V N A E G Q I T A V H L A G A G N M V S L L I  
 -----dhaB4-----

SdiI  
 SfiI  
 BsaK I  
 BstHPI  
 Hpa I

FIG.--2F-2

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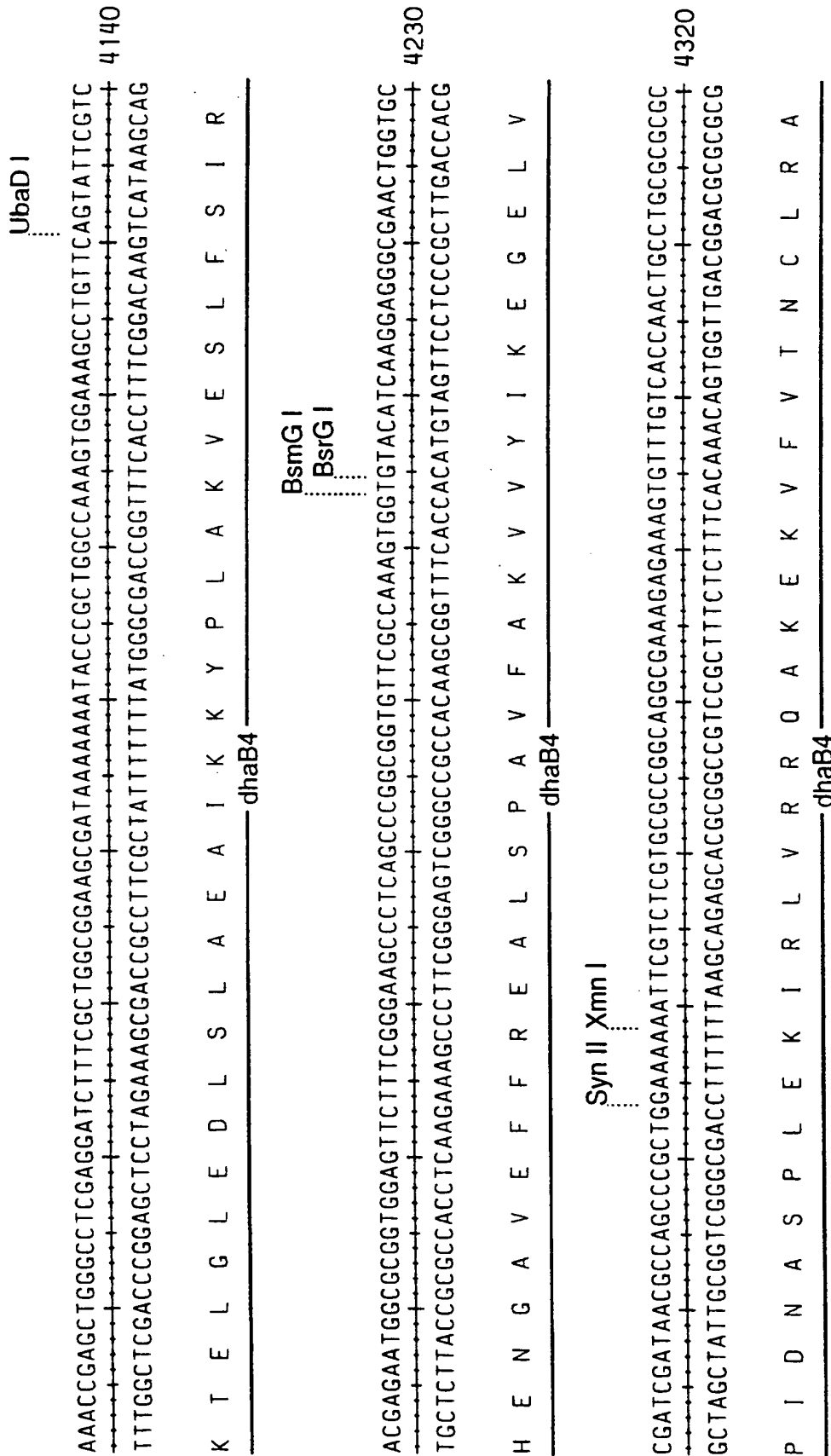


FIG.-2F-3

TGCGCCAGGTCACCCGGGGTCCATTCGGGATATCGCCTTTGIGGTGCTGGTGGCGGCTCATCGCTGGACTTTGAGATCCCGCAGC 4410  
ACGCGTCCAGAGTGGCCCGCCCAAGTAAGCGCTATAGCGGAAACACCACGACCCCGCGAGTAGCGACCTGAAACTCTAGGGCGTCCG

L R Q V S P G G S I R D I A F V V L V G G S S L D F E I P O  
-----dhaB4-----

EcoPrr I

Bcg I'

TTATCAGGAAGCCTTGTCGCACTATGGCGTGGTCGCCGGGCAGGGCAATATTCGGGGAACAGAGGGCCCGGCAATGCGGTCCGACCCG 4500  
AATAGTGCCCTTCGGAACAGCGTGATACCGCACCGGCCCGTCCCGTTATAAGCCCCCTTGTCCTCCCGCGCGTTACGCCACGCGGTGGC

L I T E A L S H Y G V V A G O G N I R G T E G P R N A V A T  
-----dhaB4-----

Bcg I

GGCTGCTACTGGCCGGTCAGGCGAATTAA 4529  
----->  
CCGACGATGACCGGCCAGTCCGCTTAATT

G L L L A G O A N  
-----dhaB4-----

FIG. 2G

# FIG. 3



	MYRIYTRTGDN	GT	TAL	FGG	SR	ID	KDD	IR	VE	A	Y	G	T	V	D	E	L	I	S	Majority																		
		10			20				30					40																								
1	MYRIYTRTGDN	GT	TAL	FGG	SR	ID	KDD	IR	VE	A	Y	G	T	V	D	E	L	I	S	cfu_orfW.aa																		
1	MYRIYTRTGDK	GT	TAL	YGG	SR	IE	KDH	IR	VE	A	Y	G	T	V	D	E	L	I	S	kpn_orfW.aa																		
	QLGVCYASTR	DAG	LRES	LH	A	I	QQT	L	F	V	L	G	A	E	L	A	S	D	A	K	G	L	T	Majority														
		50			60				70					80																								
41	QLGVCYASTR	QAE	L	RQ	E	L	H	A	M	Q	K	M	L	F	V	L	G	A	E	L	A	S	D	Q	K	G	L	T	cfu_orfW.aa									
41	QLGVCYAT	TRD	AG	L	RES	L	H	I	QQT	L	F	V	L	G	A	E	L	A	S	D	A	R	G	L	T	kpn_orfW.aa												
	RLSQ	TIG	E	E	D	I	T	A	L	E	Q	L	I	D	R	N	M	A	E	S	G	P	L	K	E	F	V	I	P	G	K	N	L	A	S	Majority		
		90			100				110					120																								
81	RLKQ	RIG	E	E	D	I	Q	A	L	E	Q	L	I	D	R	N	M	A	Q	S	G	P	L	K	E	F	V	I	P	G	K	N	L	A	S	cfu_orfW.aa		
81	RLSQ	TIG	E	E	E	I	T	A	L	E	R	L	I	D	R	N	M	A	E	S	G	P	L	K	Q	F	V	I	P	G	R	N	L	A	S	kpn_orfW.aa		
	AQLH	V	A	R	T	L	S	R	R	L	E	R	L	L	I	A	M	G	R	A	L	T	L	R	D	A	A	K	R	Y	I	N	R	L	S	D	A	Majority
		130			140				150					160																								
121	AQLH	V	A	R	T	L	T	R	R	L	E	R	I	L	I	A	M	G	R	T	L	T	L	R	D	E	A	R	R	Y	I	N	R	L	S	D	A	cfu_orfW.aa
121	AQLH	V	A	R	T	Q	S	R	R	L	E	R	L	L	T	A	M	D	R	A	H	P	L	R	D	A	L	K	R	Y	S	N	R	L	S	D	A	kpn_orfW.aa
	LFS	M	A	R	I	E	E	T	T	P	D	A	C	A	-																					Majority		
		170																																				
161	LFS	M	A	R	I	E	E	T	T	P	D	V	C	A	.																					cfu_orfW.aa		
161	LFS	M	A	R	I	E	E	T	T	P	D	A	C	A	.																					kpn_orfW.aa		

FIG.\_5

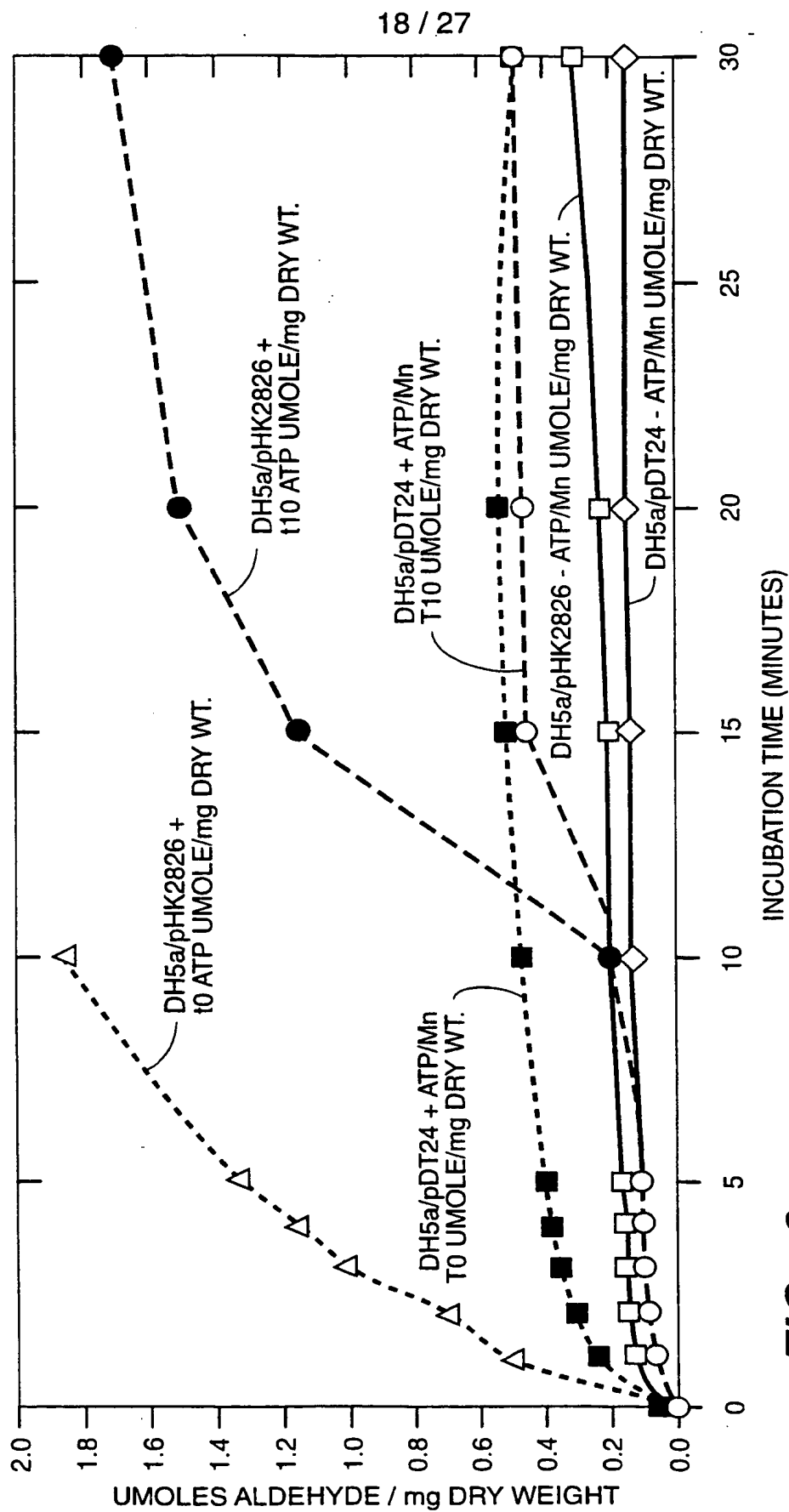


FIG. 6

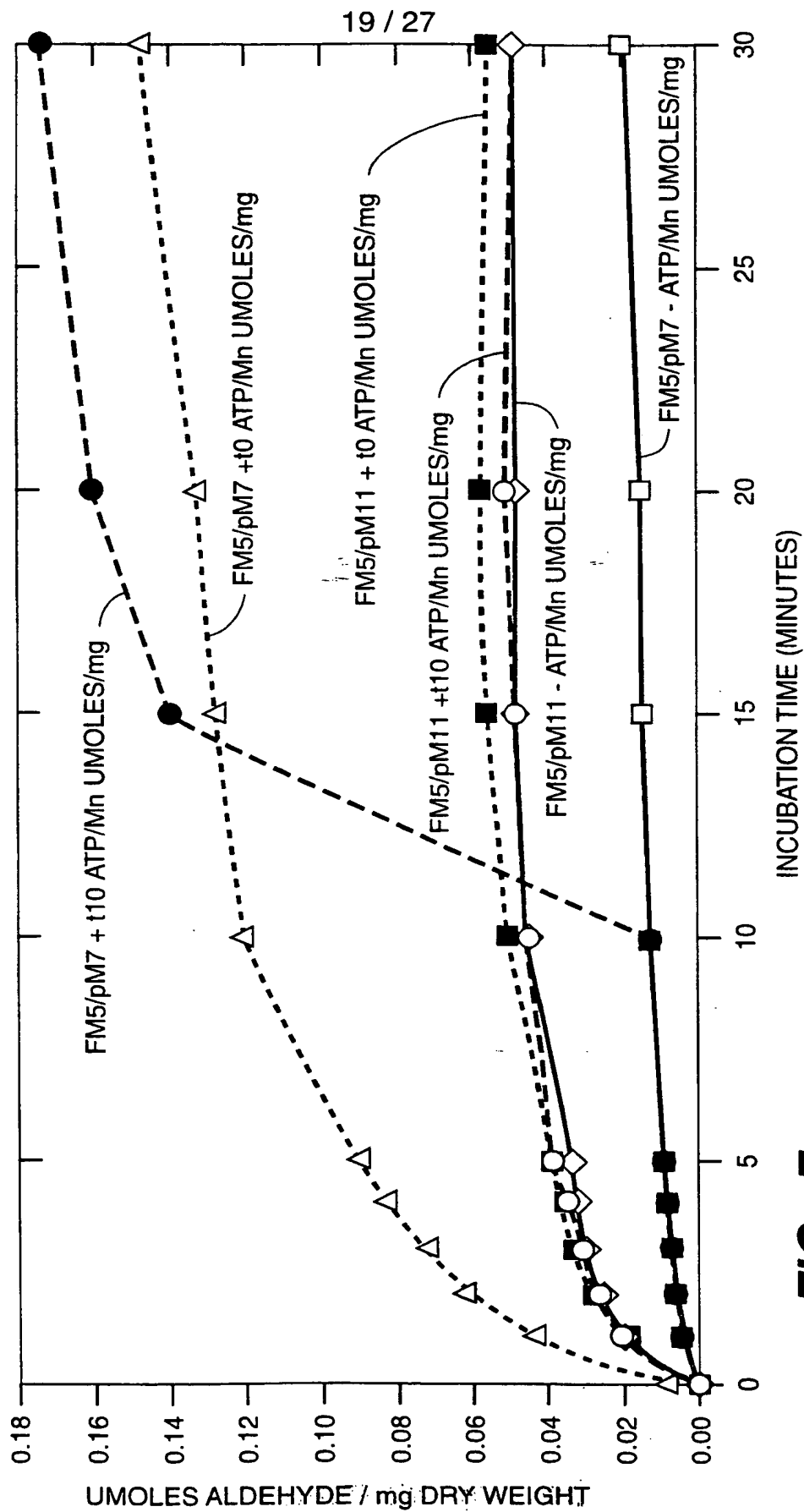


FIG. 7

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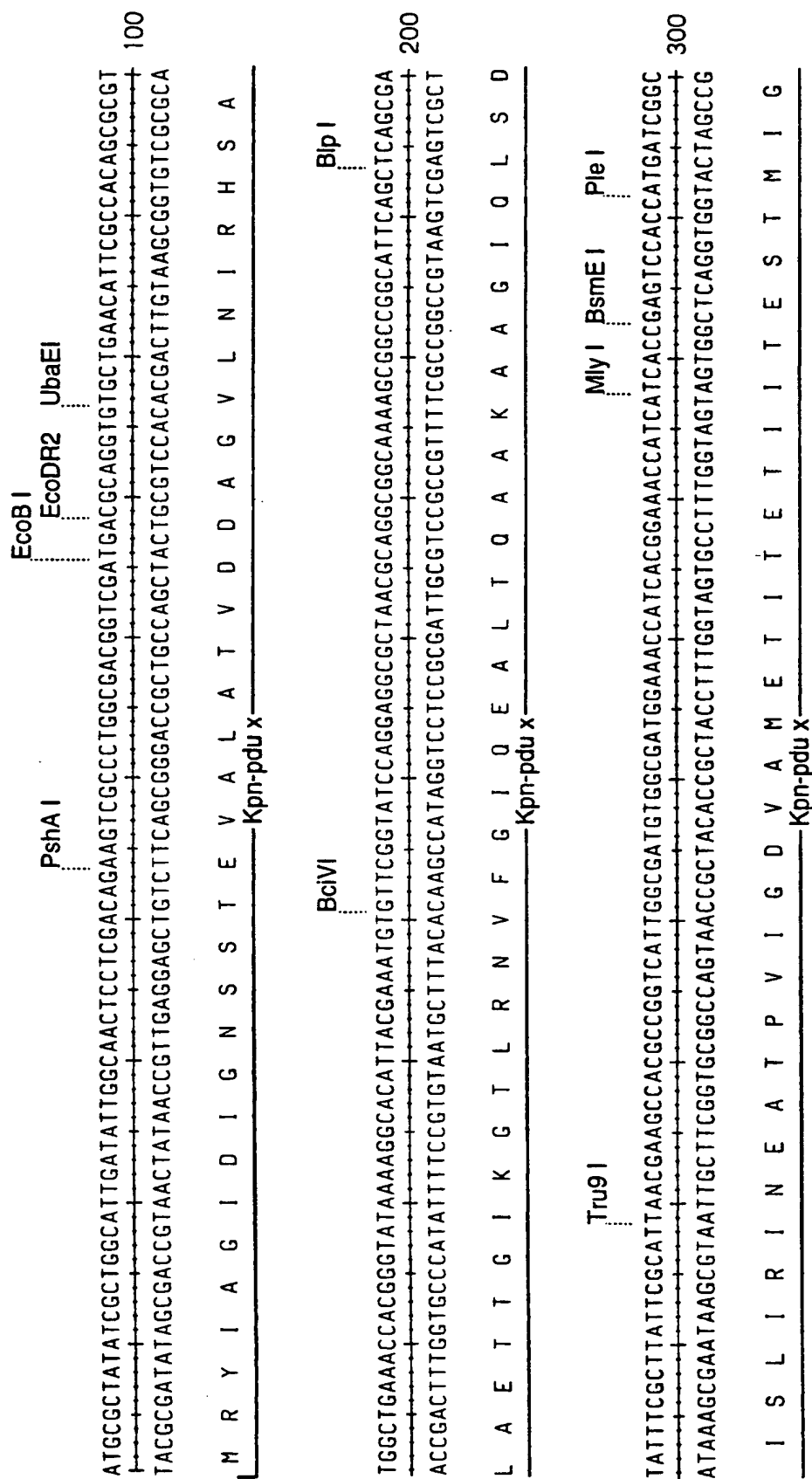


FIG. 8A-1

CATAACCCGAAGACACCCGGGGCGTGGGACTGGGGGTCCGCATCACCATCAGAGGGCTGCTGCTCCGGGACATCCCTATATCTGG 400  
GTATTGGGCTTCTGTGGGCGCGCGAGCCTGACCCCGGCTAGTGGTAGTGGTCTCCGGACGACAGGAGCGCCTGTGAGGGATATAAGACC  
H N P K T P G G V G L G V G I T I T P E A L L S C S A D T P Y I L  
Kpn-pdu x

FIG.\_8A-2

Alw26 I  
Bsa I  
BsmAI  
Bli49 I Eco31 I  
TGGTCTCCTCGGCCITTGCCGATGTCGCCGGAATGGTCAATGCGCAACGGCAGGGGCTATCAGATAACGGCATTAATTTGCAGCAGGATGA 500  
ACCAGAGGAGCGGAACTGAAACGGCTACAGCGGCGCTACCAAGTTACGCCGTGCGCGTAGTCTATTGGCCGTAATAAACGTCGTCCTACT  
V V S S A F D F A D V A A M V N A A T A A G Y Q I T G I I L Q Q D D  
Kpn-pdu x

Age I  
PfuAI  
CjeP I  
Tfi I  
CjeP I'  
CGGCGTGTGTCATAACCGGCTACAGCAACCGCTACCGGTGATCGACGAAGTTCAGCATATCGACCGGATTCACATTGGCATGCTGGCGGCCGTCGAG 600  
GCCGACGACGAGTTATTGGCCGATGTCGTGGCGATGGCCACTAGCTGCTCAAGTCTAAGTGAACCGTACGACCGCGCGGAGCTC  
G V L V N N R L Q Q P L P V I D E V Q H I D R I P L G M L A A V E  
Kpn-pdu x

FIG.\_8B-1

GTGCTTTACCCGGTAAGATCATCGAAACGCTCTCAACCCCTTACGGTATTGGACCGTTTTCGAICTCAACGCCGAGGAGCCAAAATATCGTGCCAA 700  
CAGCGAAATGGGCCATTCTAGTAGCTTTCGAGAGGTTGGGAATGCCATAACGCTGGCAAAAGCTAGAGTTGCGGCTCCTCTCGGTTTTATAGCACGGTT  
V I A L P G K I I E T L S N P Y G I A T V F D L N A E E S Q N I V P  
Kpn-pdu x

M b i l B s r B I P p u 1253 I A a t II  
TGGCACGGGCGCTGATTGGCAACCGCTCGGCGTGGTGGAACCCCTCCGGCGACGTCAAGGCCCGCGCTATTCCGGCAGGTAATCTGTGCTCAT 800  
ACCGTGCCCGCGACTAACCGTTGGCGAGCCGGCACCACCACCTTTTGGGGGAGGCGCTGCAGTTCCGGGGCGGATAAGGCCGTCCTATTAGACAACGAGTA  
M A R A L I G N R S A V V V K T P S G D V K A R A I P A G N L L L I  
Kpn-pdu x

FIG.\_8B-2

A s p 16 H I C s p 6 I C v i R I I R s a I F s u I T t h 111 I  
CGCTCAGGGGGCGCAGCGTACAGGTTGATGTGGCCCGCGGGCGGAAGCCATCATGAAGCGGTGACGGCTGCGGCAACIGGACAACGTCGCGGGAGAA 900  
GCGAGTCCCGCGTCGCAITGTCCAACTACACGGCGGCCCCCGCTTCGGTAGTACTTTTCGCCAACTGCGGACGCGGTTTGACCTGTTCAGCGGCCCTCTT  
A Q G R S V Q V D V A A G A E A I M K A V D G C G K L D N V A G E  
Kpn-pdu x

FIG.\_8C-1

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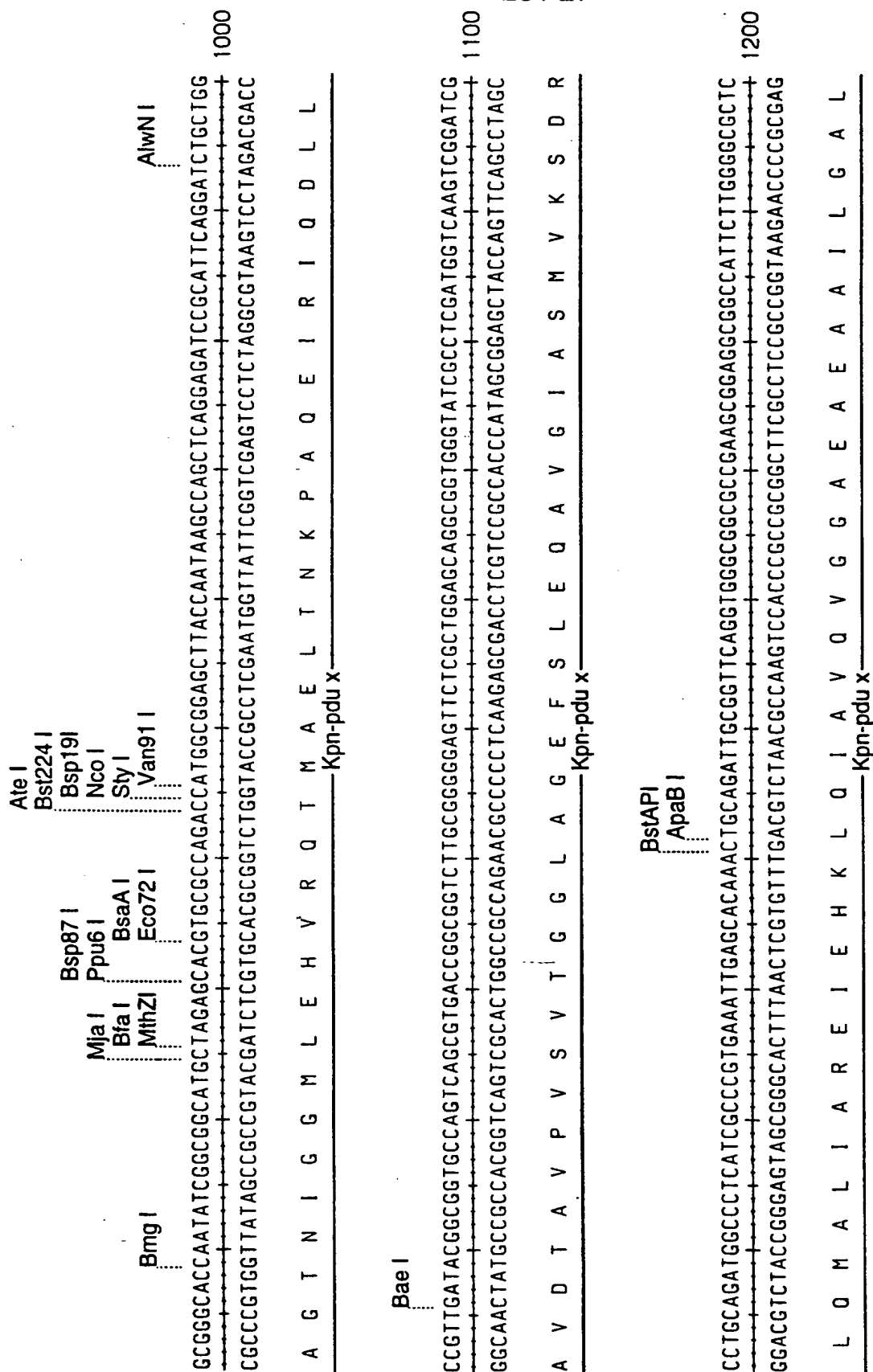


FIG.\_8C-2

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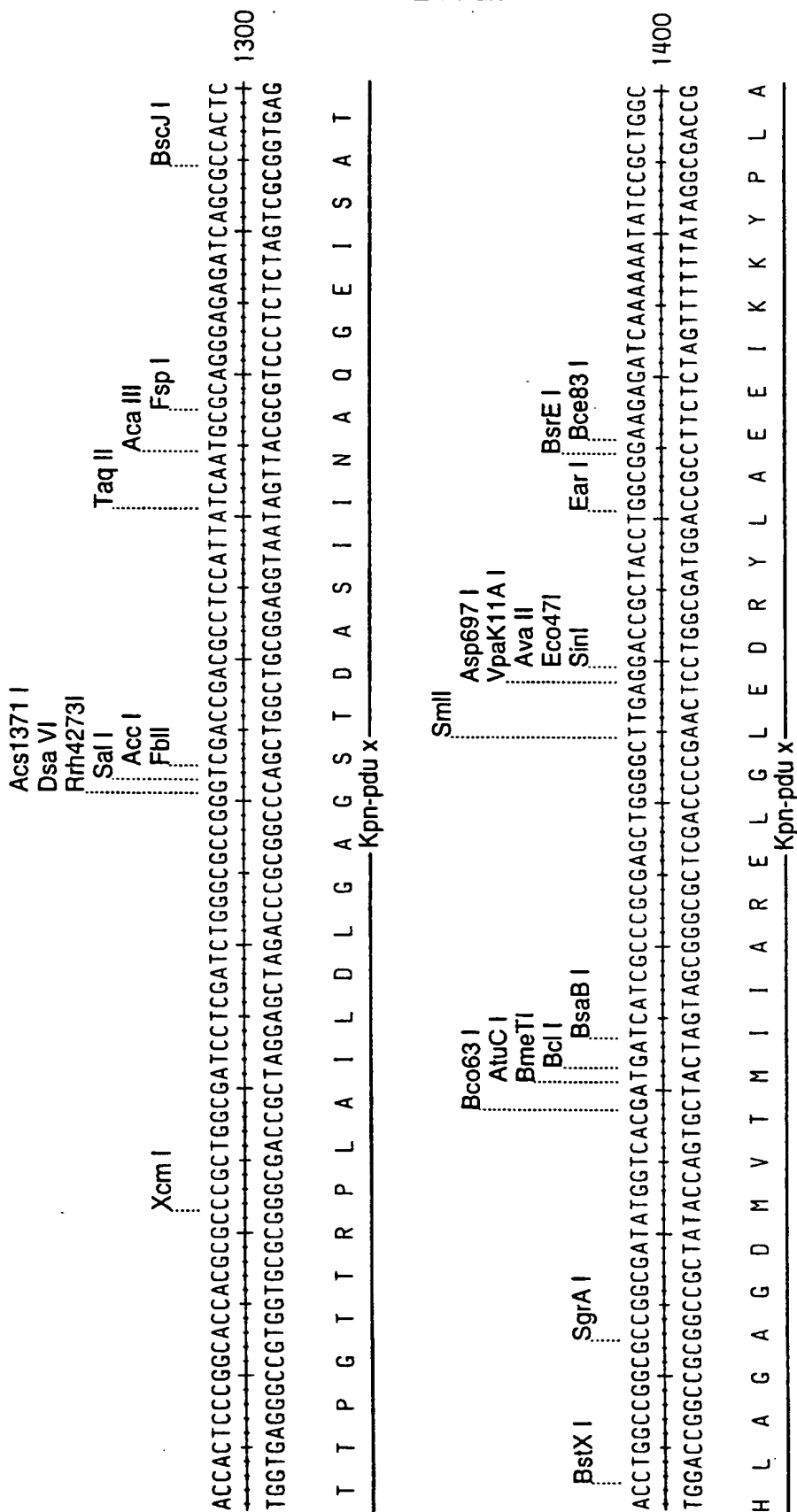


FIG.\_8D-1



AAAAGTCGAAAGCCGTTTCATCTGCGTCATGAAGACGGCAGCGTCCAGTTTTTCGGTCGGCCTTACCACCGACGGTATTTGCCCGCGCTCGCGTGAAA  
TTTTCAGCTTTCGGACAAAGTAGACGCAGTACTTCTGCCGTGCGAGGTCAAAAAGGCAGCCGGAA TGGTGGCTGCCATAAACGGGCGCAGACGCACCTTTT  
1500

K K V E S L F H L R H E D G S V Q F F P S A L P P T V F A R V C V K  
Kpn-pdu x

**FIG. 8D-2**

Syn II  
 Drd II  
 Xmn I  
 Pau I  
 BssH II  
 Ape I  
 Afl III  
 Mlu I  
 1600  
 CCGGATGAAC TGGT TCCCC TGGCGGCGATCTGCCGCTGGAGAAAGTGGCGCAATTCGCCGTAGCGCCAAATCACGGCTCTTTGTCACCAACGCCCTGC  
 GGCCTACTTGACCAAGGGGACGGGGCCGTAGACGGCGACCCTCTTCACGGCGTTAAGCGGCATCGCGGTTAGTGGCAGAAACAGTGGTTGCGGGGACG  
 P D E L V P L P G D L P L E K V R A I R R S A K S R V F V T N A L  
 Kpn-pdu x

Gsp I  
BavI  
Pvu II  
Bse59 I  
BstE II  
EcoRI  
EcoR124 I  
BsmF I  
BspLU11 III  
Fin I  
Ama I  
Nru I  
Bsp117 I  
Ban II  
Eco24I

1700

GAGCGTTACGCCAGGTGAGCCCTACCGGCAACATTCGGGACATCCCGTTCGTGGTGCTGGTGGCGGGCTCGTCCCCTCGATTTCGAGATCCCCCAGCTGGTCTCGCAAATGCCGTCCTCGGATGGCCGTGTAAAGCGCTGTAGGGCAAGCACACCACCCGCCGAGCAGGGAGCTAAAGCTCTAGGGGGTTCGACCA

R A L R Q V S P T G N I R D I P F V V L V G G S S L D F E I P O L V

Kpn-pdu x

**FIG. 8E-1**

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BseMI      BsrDI

CACCGACGGCTGGCGCACTACCGGTGGTTGCCGGGCGGGCAACATCCGGGCTGTGAAGGCCACGCAATGCGGTGCGCCAGCGGATTACTCTTTCC  
 GTGGCTGCGGACCGCGTGATGGCCGACCAACGGCCCGCGCGTTGTAGGCGCGGACACTTCGGGTGCGTTACGCCAGCGGTGCGCTAATGAGGAAAGG  
 1800

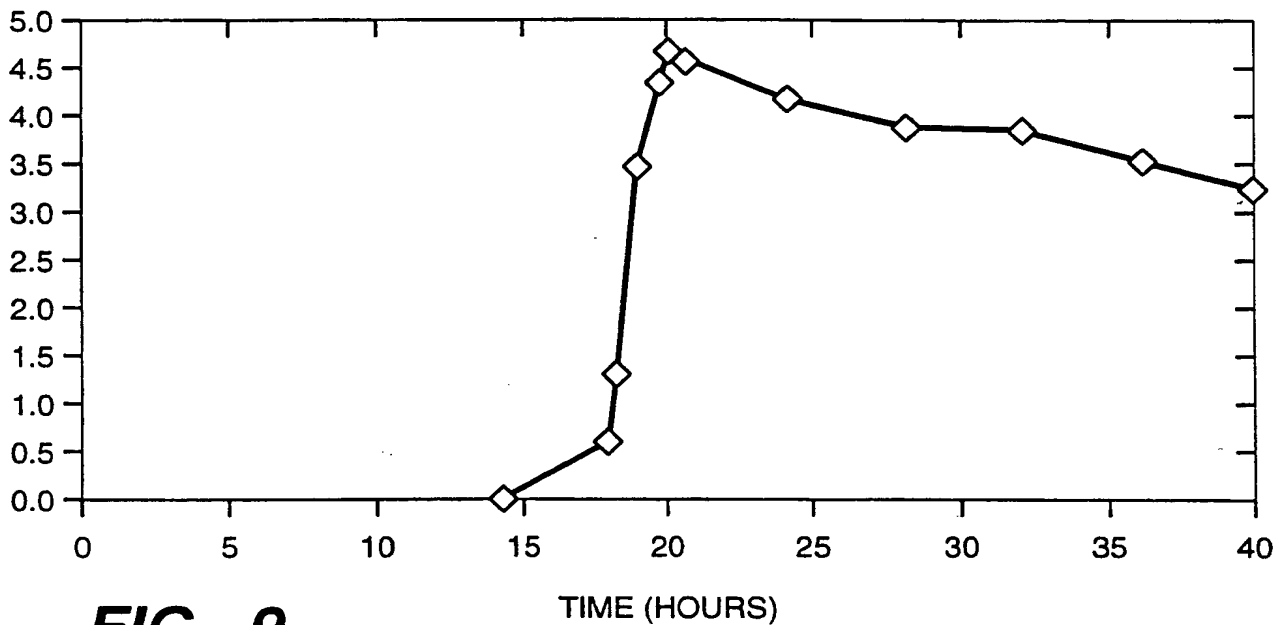
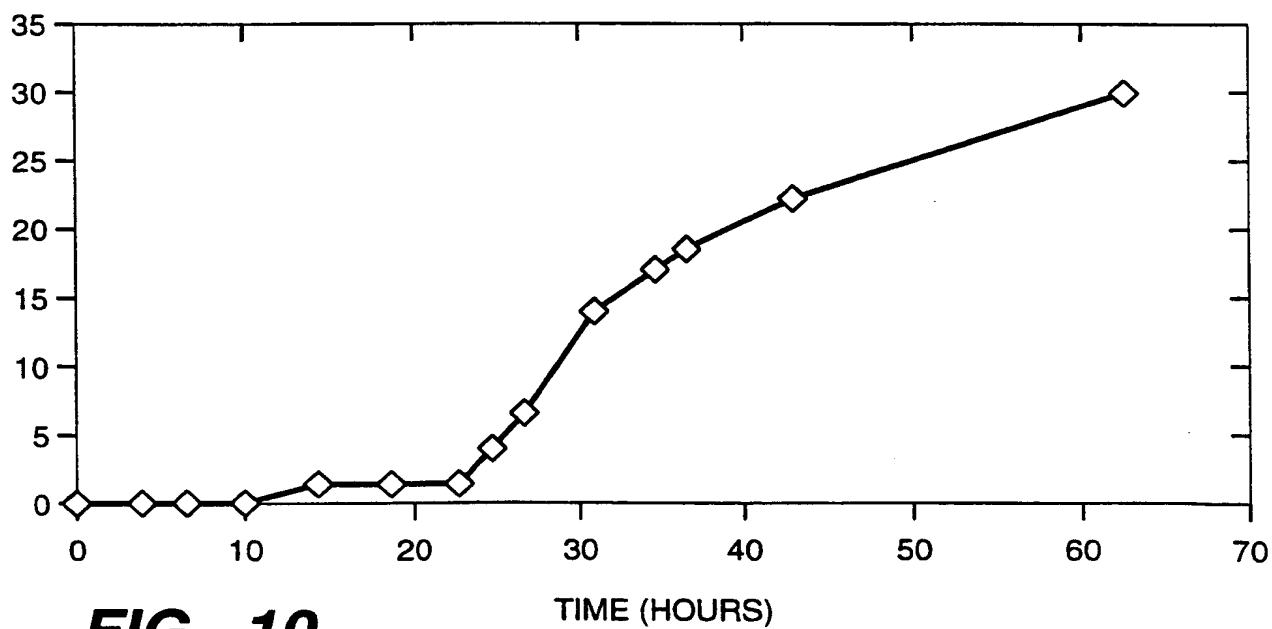
T D A L A H Y R L V A G R G N I R G C E G P R N A V A S G L L L S  
 Kpn-pdu x

TGGCAAAAAGGAGGCACACATGGAGAGTAG  
 ACCGTTTTTCCTCCGTGTGTACCTCTCATC  
 1830

W O K G G T H G E  
 Kpn-pdu x

FIG.-8E-2

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**FIG.\_9****FIG.\_10**